STATEMENT OF
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COMMITTEE ON TRANSPORATION AND INFRASTRUCURE
U. S. HOUSE OF REPRESENTATIVES
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REGARDING NEXTGEN: A REVIEW OF THE RTCA MID-TERM IMPLEMENTATION TASK FORCE REPORT

Good morning, Chairman Costello, Ranking member Petri, and Members of the Subcommittee. Thank you for inviting me to participate in today's hearing on NextGen: A Review of the RTCA Mid-Term Implementation Task Force Report. My name is Margaret Jenny and I am the President of RTCA, Inc.

RTCA BACKGROUND

A few words about RTCA may be of value in setting the stage for my remarks. RTCA is private, not-for-profit Corporation that is utilized by the Federal Aviation Administration (FAA) as a Federal Advisory Committee to provide a venue for the aviation community to forge consensus on aviation issues. Our deliberations are open to the public and our products are recommendations, developed by aviation community volunteers functioning in a collaborative, peer reviewed type of environment. RTCA provides two categories of recommendations: (1) policy and investment priorities to facilitate implementation of National Airspace System improvements, and (2) performance standards, reports, and guidance documents used by the FAA as a partial basis for the certification of avionics.

TASK FORCE OVERVIEW

My testimony today will describe the RTCA NextGen Mid-Term Implementation Task Force initiative and the resulting Task Force recommendations. The Task Force was established by the RTCA Policy Board in response to a request from Hank Krakowski, FAA Air Traffic Organization Chief Operating Office, and Peggy Gilligan, FAA Associate Administrator for Aviation Safety.

Over 335 individuals from 141 different organizations participated in the Task Force. Members of the Task Force represented all segments of the aviation community, from large commercial air carriers to private pilots of single engine piston airplanes, as well as the pilots of business aviation aircraft and the organizations for which they fly. The Air Traffic Controllers union as well as a Pilot's union and dispatchers were part of the consensus as well. Airport operators, manufacturers of aircraft communication, navigation and surveillance avionics participated as did the major commercial airplane manufacturers. Participants brought technical, operational, and, for the first time on a Task Force, financial and strategic planning expertise. You might imagine that all this diversity and competing interests would have made this an impossible task,

and if you had said that to me three weeks prior to our deadline, I would have agreed with you. But at the end of the day, the shared desire to improve the nation's air transportation system prevailed, and on September 9, 2009, RTCA delivered a consensus-based set of recommendations to the FAA on the NextGen operational capabilities to be implemented between now and 2018.

A year ago, many were asking "What is NextGen?" With the delivery of the Task Force recommendations, we are now asking "How soon can we deliver the benefits of NextGen?"

ESSENCE OF THE TASK FORCE RECOMMENDATIONS

First, the Task Force stressed the importance of implementing ***operational capabilities*** verses technologies, and deriving benefits from ***existing equipage***. This approach will help relieve congestion and delays today. But, success will also increase the community's confidence in the FAA's ability to implement NextGen.

Second, the Task Force focused on implementing solutions where the problems are most acute. This resulted in an **airport-centric approach** to NextGen, delivering capabilities at the key airports and large metropolitan areas, the bottlenecks where the problems are the most acute and most likely to ripple through the country causing unnecessary flight delays, misconnections and cancellations. If New York sneezes, the nation's air transportation system gets a cold. If Chicago gets a cold, the air transportation system can get pneumonia. Rather than deploying infrastructure throughout the entire system first and then implementing operational capabilities that deliver user benefits, the Task Force recommends implementing targeted operational capabilities at specific locations aimed at keeping the entire system healthy. It should be noted that capabilities recommended will require deploying an ***integrated*** suite of technologies. ***This will require a new way of doing business***.

TASK FORCE OPERATIONAL CAPABILITY RECOMMENDATIONS

The Task Force made recommendations in seven (7) areas:

SURFACE: Improve airport surface traffic situational awareness and data sharing for enhanced safety and reduced delays. Establish a single point of accountability within the FAA for Airport Surface.

- Deploy ground infrastructure to capture surface activities
- Define consistent views of operational data for collaborative decision making
- Define interoperability standards for sharing surface data among stakeholders
- Implement surface traffic management decision support tools

RUNWAY: Increase throughput at airports with closely-spaced parallel, converging and intersecting runways. This will reduce delays, noise and emissions.

- Maximize use of converging or intersecting runways

- Allow use of RNP/LPV/GBAS or ILS for all existing simultaneous independent and dependent approaches
- Update 20-year blunder assumptions to enable operating simultaneous independent approaches to closer runways than currently allowed
- Use high-update radar, multi-lateration for closely spaced parallel operations at appropriate locations

METROPLEX: Increase metroplex capacity and efficiency by de-conflicting traffic to and from all airports within large metropolitan areas.

- Optimize RNAV operations (using Tiger Teams to focus on quality procedures at each specific location)
- Integrate procedures designed to deconflict airports and expand use of terminal separation rules (i.e. 3 mi separation)

CRUISE: Increase cruise efficiency through enhanced use of Special Activity Airspace (SAA), and increased availability, greater use of automation for aircraft metering, merging and spacing at bottlenecks, and use of flexible RNAV routing

- Institute more efficient use of SAA
- Expand use of time-based metering
- Develop area navigation-based en route system

ACCESS: Enhance access to low-altitude, non-radar airspace for general aviation traffic, and increase availability of GPS approaches to more general aviation airports

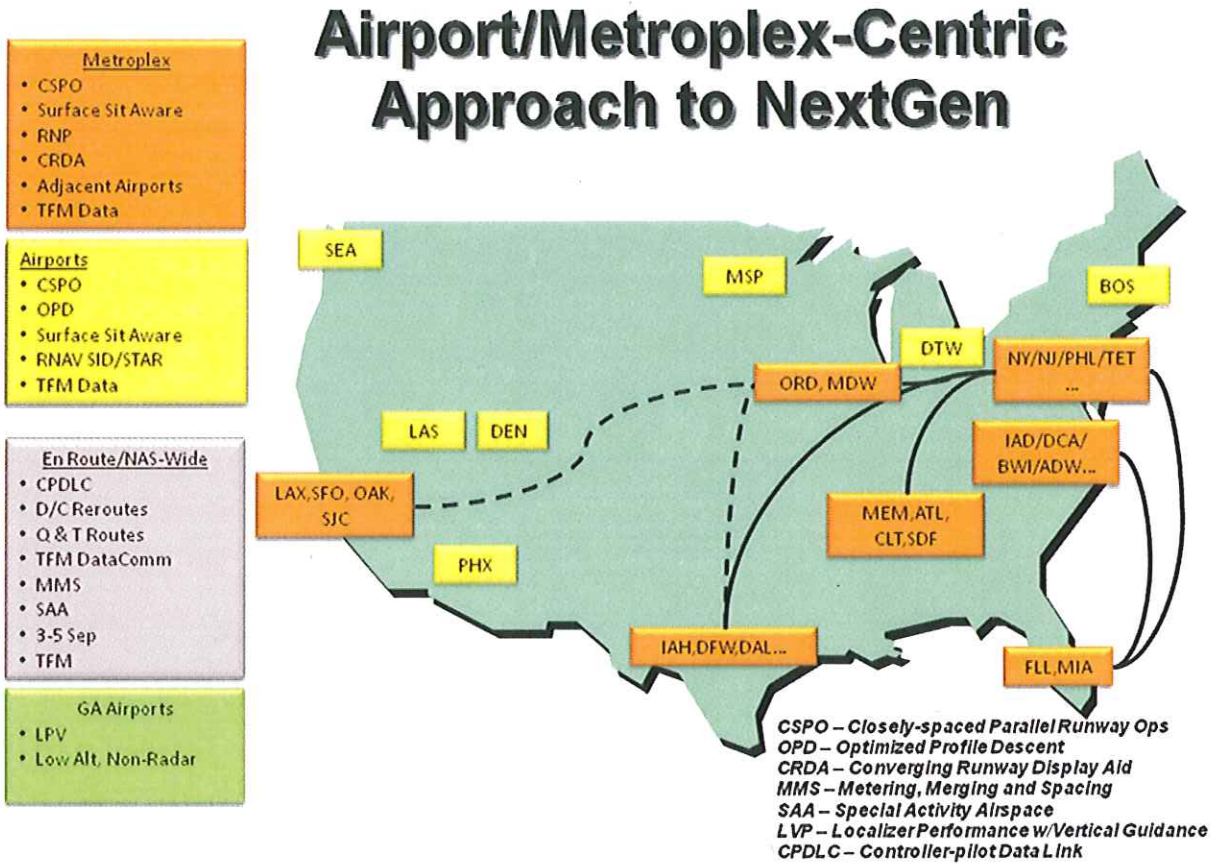
- Extend radar-like services to low altitude airspace without radar surveillance
- Implement LPV procedures for airports without precision approaches

DATACOMM: Deploy air-ground digital data communication applications to decrease gate departure delays, and enhance efficiency and safety of airborne traffic, especially when re-routing multiple aircraft around severe weather

- Implement Segment 1 of FAA's Data Comm program using existing standards (reroutes, revised pre-departure clearance, CPDLC, Tailored Arrivals)

INTEGRATED AIR TRAFFIC FLOW MANAGEMENT: Improve overall system efficiency through enhanced collaborative decision making between the FAA and users' flight operations centers.

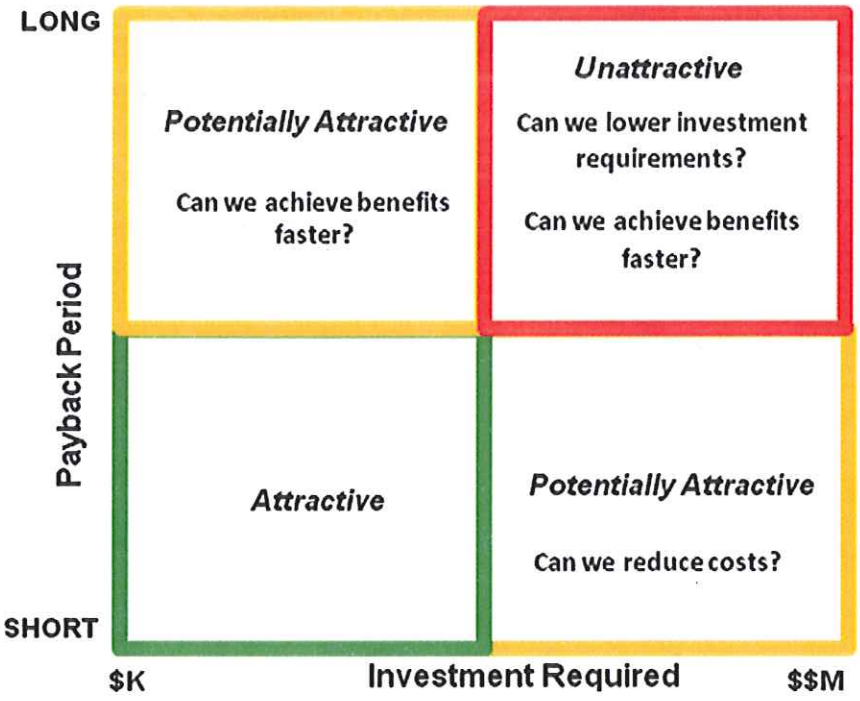
Mapped out, the recommendations deliver benefits at the major metropolitan areas and most congested airspace, as shown in the figure below. Each capability and location has at least one operator (in most cases multiple operators) committed to investing in the capability.



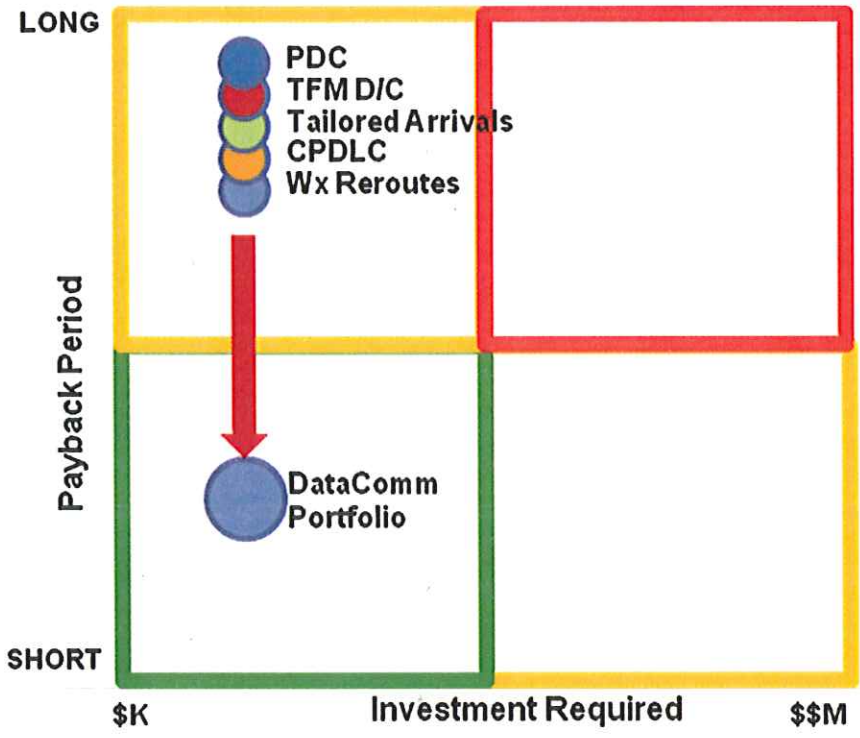
For each capability recommended, the Task Force defined the following: **WHAT** operational capabilities to implement, including the intended performance benefit, **WHERE** to implement each, **WHO** from the user community is committed to making the requisite investments, and **WHEN** the capability should be implemented and delivering benefits.

THE BUSINESS CASE

The report makes another critical point: closing the business case for those capabilities requiring substantial investments requires delivering benefits within a requisite payback period with a high degree of confidence that the payback will be achieved. Many of the NextGen investments fall into the category of high cost, long payback period and low confidence of payback (partly because the payback is dependent upon outside forces, e.g., the FAA. The Business Case Subgroup of the Task Force laid out a framework for analyzing the business case for investments as shown in the figure below. The aim of the recommendations is to move the capabilities into the lower left quadrant of the framework.



One way to close the business case for a capability with a long payback period is to find ways to achieve a return on that investment faster. The Task Force cost/benefit analysis showed that while no individual DataComm capability had a positive business case, but when five capabilities were bundled so that a single investment in technology delivered five new capabilities, the business case closed for the airlines.



ELEMENTS OF OPERATIONAL CAPABILITIES

To deliver the benefits of any operational capability, the FAA must accomplish a host of related initiatives. To assist the FAA and the community in incorporating these recommendations into a plan with a high probability of success, the Task Force documented all known challenges to delivering the benefits of the capability. Information captured included:

- Change in role of pilot, controller, dispatcher
- Technology or equipage required
- Technology or equipage available
- Decision support tools required
- Policy changes needed
- Implementation bandwidth issues to resolve
- Airspace changes required
- Standards required
- Operations approval required
- Certification required
- Political risk
- Training required

If the FAA can meet these challenges and deliver benefits for existing equipage, then the business case for installing the next generation of NextGen technologies becomes much more attractive because the probability of achieving the quick return on investment is substantially increased. Essentially, they will have already completed much of the work needed to deliver the benefits of technologies such as DataComm and ADS-B.

While the Task Force recognized that the FAA would continue to develop the baseline programs and technologies described in the NextGen Implementation Plan (NGIP), it assumed that as a result of incorporating these recommendations, the FAA will most likely find it necessary to adjust some element of these programs and reprioritize its investment portfolio. Since the FAA has received the recommendations, they have acknowledged that some such changes will indeed be necessary and forthcoming.

PRIORITIZATION PROCESS

At the outset, the Task Force created an initial list of nearly 120 candidate capabilities, and reduced it to the final 29 specific recommendations in the seven categories. This was accomplished by following a few key guidelines.

- Require data supporting the inclusion of a candidate operational capability

- Require that all capabilities being considered have at least one operator committed to invest in its implementation and all capabilities must identify the location and timeframe for delivery of benefit.
- Considered first those candidate operational capabilities that take advantage of existing equipage that could evolve to capabilities using more sophisticated technologies over time.
- Develop the evaluation criteria together and use it to prioritize the candidate list
- Consider expert opinion when no data is available but the case is solid, and reduce the "confidence level indicator" for such candidate

A robust assessment process was established and used to assess the value of all candidate operational capabilities. Known benefits, costs and risks were captured and enabled the Task Force to look at the relative value of all capabilities. An evaluation matrix was used to capture the benefits, costs, risks, readiness and other assessments of each candidate operational capability. The evaluation matrix was a key tool in the final prioritization and recommendations of this Task Force. All assessment information for the 29 recommendations as well as for an additional 28 capabilities that did not make the final cut, have been captured in the Task Force knowledge base that was delivered to the FAA along with the recommendations.

OVERARCHING RECOMMENDATIONS

In addition to the operational capabilities, the Task Force identified four overarching recommendations deemed so critical to the successful implementation of all capabilities that they were documented in the body of the report. These recommendations are:

1. Achieve existing 3- and 5-mile separation by eliminating the buffers now applied due in part to cultural issues
2. Streamline the Operations Approval process
3. Incentivize equipage. This can be achieved in one of three ways: (1) providing an operational incentive (better routes, reduced delays), (2) streamlining the processes required to get take full advantage of new equipage, or (3) providing financial incentives. While financial incentives to accelerate equipage would be welcome by the stakeholders, the failure to do all else necessary to provide operational benefits would yield NO improvements in NAS performance, and, hence, no return on the government's investment.
4. Importantly, to maintain the momentum created by the work of the Task Force and to facilitate holding the community consensus intact through the implementation of NextGen, the Task Force recommends that the FAA and industry utilize the RTCA mechanism as well as joint government/industry implementation teams to facilitate continued transparency and collaboration in the planning, implementation and tracking of future activities.

CONCLUSION

Some have asked whether the FAA can afford to implement the Task Force recommendations as well as the NextGen vision. The answer is that we cannot afford NOT to implement these recommendations. First, we do not yet have a crisp enough definition of the vision to implement

it. But more importantly, the Task Force recommendations solve very real and current problems while laying the necessary ground work for the longer-term NextGen. They are, in effect, the risk mitigation program for NextGen.

Thank you for the opportunity to testify on this important topic. I'd be pleased to address your questions.